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Introduction

1.1 Background

Among the profound evolutions in development economics in recent decades has been the renewed interest in, and growing contributions on, the role of financial systems in economic development. While it is clear that a positive effect exists between financial depth and economic growth, the questions of what determines financial development and how to develop financial markets remain imperfectly understood.

Research on the role of financial development in growth can be traced back at least to Bagehot (1873) who claims that large and well-organized capital markets in England enhanced resource allocation towards more productive investment. Other historical antecedents before 1970 include, among others, Schumpeter (1911), Hicks (1969) and Goldsmith (1969). Schumpeter (1911) emphasizes the critical role of a country's banking system for economic development in mobilizing savings and encouraging productive investment. Hicks (1969) highlights the importance of financial markets in the process of industrial revolution with an observation that the development of financial systems facilitates the applications of new technologies and innovations. Goldsmith (1969) finds evidence of a positive link between financial development and economic growth from a comparative study with data for 35 countries over the period 1860–1963.

Over the past three decades, the financial repression and financial development framework proposed by McKinnon (1973) and Shaw (1973) has been the main intellectual basis of financial market analysis and policy advice. Before the 1970s most developing countries had been financially repressed in the sense that their financial systems had imposed upon them discriminatory taxation in the form of low interest

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rate policies, high reserve requirements and high inflation rates. Keynes (1936) and Tobin (1956) are among the various justifications for maintaining these policies. The McKinnon-Shaw model of financial repression formulates the phenomenon of financial repression and points out that financial repression reduces both the quantity and quality of aggregate investment in the economy in the sense that a lower deposit rate of interest discourages households from holding deposits that would be used to finance productive investment. The policy implication of the McKinnon-Shaw model is that government's repressive policies towards financial systems (such as interest rate ceilings, high reserve requirements and credit control) retard financial development, and therefore economic growth. On the contrary, financial liberalization and financial development can stimulate investment and its productivity, and ultimately foster economic growth. Since 1973, the McKinnon-Shaw model has influenced financial sector policies in many developing countries considerably.

Motivated by the McKinnon-Shaw model, a number of studies in this area have been undertaken, such as Kapur (1976) and Mathieson (1980) among others. However, these works in general treat financial intermediation and financial institutions as exogenous. The last two decades have witnessed a resurgence of interest in the relationship between financial development and economic growth which incorporates the insights of endogenous growth models. These works include Townsend (1979), Diamond (1984), Gale and Hellwig (1985), Williamson (1986, 1987), Bencivenga and Smith (1991), Greenwood and Jovanovic (1990), Saint-Paul (1992), King and Levine (1993) and Bernanke *et al.* (1999) among others.

Apart from a standard Arrow-Debreu framework, these studies make use of the assumption of information asymmetry between lenders and borrowers, producing significant findings. Due to the presence of information asymmetries, the problem of adverse selection and moral hazard might arise, since the borrowers (typically entrepreneurs) have incentives to hide their actual (or expected) return on their investment, calling for costly state verification. The financial contract and financial intermediation are therefore endogenously determined. Not only do these models demonstrate how financial intermediaries emerge, they also analyse how financial intermediation promotes economic growth. The inherent functions of financial systems, including mobilizing savings to their highest valued use, acquiring information, evaluating and monitoring investment projects and enabling individuals to diversify away idiosyncratic risk, have been widely believed to encourage productive investment and therefore total factor productivity.[1]

Given the broad consensus on the substantial role of financial development in economic growth, it is of great practical importance to understand the origins of financial development. Economists still have an insufficient understanding of what brings about the emergence and development of financial markets, what are the reasons why different financial structures, bank-based or market-based, exist in countries where similar levels of economic development have been reached and what accounts for the differences in the level of financial development in countries like the OECD member countries which have similar income levels and geographic conditions.

This research seeks to investigate the political, economic, policy and geographic determinants of the development of financial markets. In addition, it attempts to examine the causality between financial development and another important aspect of economic activities, namely aggregate private investment. It also aims to explore the consequences of political liberalization in terms of institutional improvement for financial development and whether we should expect any changes in the political system, from autocracy to democracy for example, to exert any influence on the speed of financial development. It then studies what stimulates governments to initiate reforms aimed at financial development. This research ends up in the last chapter by studying the determinants of carbon markets in developing countries from a geographic perspective.

The following section provides a brief review on the determinants of financial development. Section 1.3 describes the structure of the book.

1.2 Origins of financial development: A review

Recent years have witnessed burgeoning research into the potential determinants of financial development. This section briefly outlines the main possible determinants of financial development, including institutional factors, macroeconomic factors, geographic factors and others which have been studied in the literature.

1.2.1 Institutions

Research on the role of institutions in financial development has been considerable, especially research on the effects of the legal and regulatory environment on the functioning of financial markets. A legal and regulatory system involving protection of property rights, contract enforcement and good accounting practices has been identified as essential for financial development. Most prominently, La Porta *et al.* (1997,

1998) have argued that the origins of the legal code substantially influence the treatment of creditors and shareholders, and the efficiency of contract enforcement. They document that countries with a legal code like Common Law tend to protect private property owners, while countries with a legal code like French Civil Law tend to care more about the rights of the state and less about the rights of the masses. Countries with French Civil Law are said to have comparatively inefficient contract enforcement and higher corruption, and less well-developed financial systems, while countries with a British legal origin achieve higher levels of financial development. Among others, Mayer and Sussman (2001) emphasize that regulations concerning information disclosure, accounting standards, permissible banking practice and deposit insurance do appear to have material effects on financial development.

Beck *et al.* (2003)'s application of the settler mortality hypothesis of Acemoglu *et al.* (2001) to financial development is another significant work in this context. They argue that colonizers, often named as extractive colonizers, in an inhospitable environment aimed to establish institutions which privileged small elite groups rather than private investors, while colonizers, often named as settler colonizers, in more favourable environments were more likely to create institutions which supported private property rights and balanced the power of the state, therefore favouring financial development. Both the legal origin theory of La Porta *et al.* (1997, 1998) and Beck *et al.* (2003)'s application are related to colonization, but the former is more concerned with how colonization determines the national approaches to property rights and financial development, whereas the latter is more about the channel via which colonization influences financial development.

The recently developed "new political economy" approach regards "regulation and its enforcement as a result of the balance of power between social and economic constituencies" (Pagano and Volpin, 2001). It centres on self-interested policy-makers who can intervene in financial markets by either overall regulation or individual cases for purposes such as career concerns and group interests. Rajan and Zingales (2003) emphasize the role of interest groups, and especially the incumbent industrial firms and the domestic financial sector, in the process of financial development. They argue that, in the absence of openness, incumbents have strong incentives to block the development of a more transparent and competitive financial sector which undermines the incumbents' vested interests and relationships. When both trade openness and financial openness are encouraged, the incumbents have incentives to support financial development from which more funds can be sought to meet

foreign competition and new rents can be generated to compensate partially for their loss of incumbency.

Generally speaking, institutions might have a profound impact on the supply side of financial development. The level of institutional development in a country to some extent determines the sophistication of the financial system.

1.2.2 Policy

The policy view highlights the importance of some macroeconomic policies, openness of goods markets and financial liberalization in promoting financial development. The significant effect of policy on financial development could be working through either its demand side or its supply side.

Some major national macroeconomic policies such as maintaining lower inflation and higher investment have been documented as being conducive to financial development. Huybens and Smith (1999) theoretically and Boyd *et al.* (2001) empirically investigate the effects of inflation on financial development and conclude that economies with higher inflation rates are likely to have smaller, less active and less efficient banks and equity markets. Some recent work has supported the view that policies which encourage openness to external trade tend to boost financial development (Do and Levchenko, 2004).

In addition, research has been carried out to study the effects of financial liberalization on financial development over the past three decades, following the McKinnon-Shaw model (McKinnon, 1973; Shaw, 1973), which concludes that while financial repression reduces the quantity and quality of aggregate investment, financial liberalization can foster economic growth by increasing investment and its productivity. The positive link between domestic financial liberalization and financial development is supported by evidence (World Bank, 1989), although domestic financial liberalization is not without risks (Demirgüç-Kunt and Detragiache, 1998). Research on the positive correlation between external financial liberalization, especially capital account openness, and financial development is discussed in the panel data studies of Bailliu (2000) and Chinn and Ito (2006), although potential destabilizing effects may also exist. Claessens *et al.* (1998) present evidence that opening banking markets improves the functioning of national banking systems and the quality of financial services, with positive implications for banking customers and lower profitability for domestic banks. Laeven (2000) examines whether the liberalization of the banking sector may help to reduce financial restrictions and the external cost of the capital premium,

stimulating investment and financial development. Bekaert *et al.* (2002) provide evidence that opening up the stock market to foreign investors renders stock returns more volatile and more highly correlated with the world market return.

1.2.3 Geography

There is less work directly addressing the potential correlation between geography and financial development in comparison to that for policy and institutions. However, much research attention has been paid to the importance of geography for general economic development, emphasizing three aspects in particular.

The first group is concerned with the correlation between latitude and economic development. Countries closer to the equator typically have a more tropical climate. On the one hand, research by Kamarck (1976), Diamond (1997), Gallup *et al.* (1999) and Sachs (2003a, 2003b) suggests that tropical location may lead directly to poor crop yields and production due to adverse ecological conditions such as fragile tropical soils, unstable water supply and prevalence of crop pests. On the other hand, tropical location can be characterized as an inhospitable disease environment, which is believed to be a primary cause for "extractive" institutions (Acemoglu *et al.*, 2001).

A second strand of research relates to countries being landlocked, distant from large markets or having only limited access to coasts and rivers navigable to the ocean (Sachs and Warner, 1995a, 1995b, 1997; Easterly and Levine, 2003; Malik and Temple, 2009). As natural barriers to external trade and knowledge dissemination, geographic isolation and remoteness to some extent determine the scale and structure of external trade in which countries engage. The potential to enter a large economic market and exploit economies of scale may be limited by particular geographic circumstances. The ability to develop a competitive manufacturing sector may be constrained when some intermediate inputs for the production of manufactured goods need to be imported from distant markets. As the main feature of external trade for these countries, the limited range of primary commodities exported determines the vulnerability of these countries to external shocks.

The last strand of research focuses on the link between resource endowment and economic development. Diamond (1997) suggests that countries with a richer endowment of grain species have more potential for high-yielding food crops and technological development. Isham *et al.* (2005) argue that a developing country's natural resource endowment affects its economic development through an unique channel in which

natural resource endowment is linked to different export structures, different export structures determine institutional capacities towards coping with external shocks and finally institutional quality is reflected in the level of GDP per capita. Easterly and Levine (2003) argue that the natural endowment of tropics, germs and crops indirectly influences income through the impacts of these on institutions.

In general, geography is likely to work mainly through the demand side of financial development, although it may affect its supply side by influencing the quality of institutions. For instance, the production of particular agricultural products or primary goods and exploitation of some natural resources could reduce the demand for external finance, relative to other countries at a similar level of GDP per capita.

1.2.4 Other variables

Other variables considered as determinants of financial development are economic growth, the income level, population level and religious, language and ethnic characteristics, etc. Greenwood and Jovanovic (1990) and Saint-Paul (1992) document that as the economy grows, the costs of financial intermediation decrease due to intensive competition, inducing a larger scale of funds available for productive investment. The importance of income levels for financial development has been addressed in Levine (1997, 2003, 2005). In considering banking sector development in 23 transition economies, Jaffee and Levonian (2001) demonstrate that the level of GDP per capita and the saving rate have positive effects on the banking system structure as measured by bank assets, numbers, branches and employees.

Stulz and Williamson (2003) stress the impact of differences in culture, proxied by differences in religion and language, on the process of financial development. They provide evidence that culture predicts cross-country variation in protection and enforcement of investor rights, especially of creditor rights. The evidence also shows that the influence of culture on creditor rights protection is mitigated by the introduction of trade openness. Djankov *et al.* (2003) shed light on the role of state ownership of the media in the extent of financial development.

1.3 Structure of the book

This research starts from a general examination of fundamental determinants of financial market development, and moves on to specific studies as to the effects of aggregate private investment and institutional improvement on financial development. It ends up with a study on the

geographic determinants of carbon market development in developing countries, mainly the Clean Development Mechanism (CDM) markets. The structure of this book is outlined as follows:

Chapter 2 is concerned with the main determinants of cross-country differences in financial development. Two prominent tools for addressing model uncertainty, Bayesian Model Averaging and General-to-specific approaches, are jointly applied to investigate the financial development effects of a wide range of variables taken from various sources. The analysis suggests that the level of financial development in a country is mainly influenced by the latter's overall level of development, the origins of its legal system and the quality of its institutions.

Chapter 3 provides an exhaustive analysis of the causality between financial development and another important aspect of economic activities, namely aggregate private investment. It uses recently developed panel data techniques on data for 43 developing countries over the period 1970–98. GMM estimation on averaged data, and a common factor approach on annual data allowing for global interdependence and heterogeneity across countries, suggest positive causal effects going in both directions. This finding has rich implications for the development of financial markets and the conduct of macroeconomic policies in developing countries in an integrated global economy. GMM results based on averaged data appear in the *Journal of Statistics: Advanced in Theory and Applications*, 2009, 2(2), whilst GMM results based on annual data appear in an *Empirical Economics* Special Issue on "New Perspectives on Finance and Development", 2010.

Chapter 4 studies the effect of institutional improvement on financial development in two steps. It examines whether political liberalization in terms of institutional improvement promotes financial development, using a panel dataset of 90 developed and developing countries over the period 1960–99, revealing a positive effect on financial development at least in the short run, particularly for lower-income countries, ethnically divided countries and French legal origin countries. The results of this chapter appear in *World Development*, 2010 38(12).

Chapter 5 studies what induces governments to undertake reforms aimed at financial development. Its starting point is Abiad and Mody (2005). Rather than their ordered logit technique, it uses a within groups approach allowing for error dependence across countries and over time. This chapter finds that policy change in a country is negatively rather than positively associated with its liberalization level, while the regional liberalization gap appears less relevant. On the effects of shocks and crises, it suggests that some of the Abiad and Mody (2005) findings are

robust, but others are fragile. Furthermore, it claims that the extent of democracy is important for this analysis, and identifies a negative effect of the extent of democracy on policy reform. Some results of this chapter appear in the *Journal of Applied Econometrics*, 2009, 24(7).

Chapter 6 examines whether certain geographic endowments matter for the CDM market development. It suggests that CDM credit flows in a country are positively affected by those in its neighbouring countries. Countries with higher absolute latitudes and elevations tend to initiate more CDM projects, whereas countries having richer natural resources do not seem to undertake more CDM projects. This finding sheds light on the geographic determinants of uneven CDM development across countries, and has implications for developing countries in terms of international cooperation and national capacity building for effective access to the CDM.